

Amendments to the Claims

This listing of claims will replace all prior versions, and listings, of claims in the application:

Claims 1 – 11 (Canceled)

12. (Currently Amended) A method for the assembly of a thin film comprising the steps of:

(a) forming a ~~layer-by-layer thin film composite polymeric membrane~~ comprised of a plurality of layers, wherein at least one of said layers comprise a polymeric material and wherein in which each of said layers has average thickness of less than 100 nm, said ~~layer-by-layer thin film composite polymeric membrane~~ formed upon a substrate by the substeps of:

- (i) immersing applying to said substrate in a first aqueous solution or dispersion of a first substance, said first substance having an affinity for said substrate, to form a first layer;
- (ii) rinsing said substrate with neat solvent;
- (iii) immersing applying to said substrate in a second solution or dispersion of a second substance said second substance having an affinity for said first substance to form a second layer;
- (iv) rinsing said substrate with neat solvent; and

(b) separating said substrate from said ~~layer-by-layer thin film composite polymeric membrane~~, overcoming the affinity between said first layer of said first substance and said substrate while retaining the affinity between said first substance and

said second substance in said additional layers.

13. (Currently Amended) The method of claim 12 further comprising the step of:
applying said substrate to a support surface before said step of forming said ~~layer-by-layer thin film composite polymeric membrane~~.
14. (Currently Amended) The method of claim 13 wherein step (b) comprises the steps of:
 - (i) removing at least a portion of said substrate together with said ~~layer-by-layer thin film composite polymeric membrane~~ from said support surface; and
 - (ii) separating said substrate from said ~~layer-by-layer thin film composite polymeric membrane~~.
15. (Cancelled)
16. (Currently Amended) The method of claim 12 wherein step (b) comprises:
dissolving, melting, etching or destroying said substrate in a solvent that does not destroy said ~~layer-by-layer composite polymeric membrane thin film~~.
17. (Withdrawn) The method of claim 12 wherein step (b) comprises the steps of:
melting said substrate at a temperature that does not destroy said layer-by-layer thin film.

18. (Currently Amended) The method of claim **12** wherein step (b) comprises the steps of:

chemically or physically treating said thin film assembly to destroy bonds between
said substrate and said thin film without destroying said layer-by-layer thin film
composite polymeric membrane.
19. (Previously Presented) The method of claim **12** further comprising the step of:

for at least one repetition of step (a)(i), replacing said first aqueous solution or
dispersion of said first substance with a solution or dispersion of a third substance, said
third substance having an affinity to said second substance.
20. (Previously Presented) The method of claim **12** further comprising the step of:

for at least one repetition of step (a)(iii), replacing the second solution or
dispersion of said second substance with a solution or dispersion of a fourth substance,
said fourth substance having an affinity to said first substance.
21. (Previously Presented) The method of claim **12** wherein:

for at least one repetition of step (a)(i), said first aqueous solution or dispersion of
said first substance is of a biological compound.
22. (Previously Presented) The method of claim **12** wherein:

for at least one repetition of step a(iii), said second solution or dispersion of said

second substance is of a biological compound.

23. (Previously Presented) The method of claim 12 wherein:

for at least one repetition of step (a)(i), said first aqueous solution or dispersion of said first substance is comprised of a structural stabilizing material selected from a group consisting of macromolecules, exfoliated clay platelets, nanoparticles, nanowires, and carbon nanotubes.

24. (Previously Presented) The method of claim 12 wherein:

for at least one repetition of step (a)(iii), said second solution or dispersion of said second substance is comprised of a structural stabilizing material selected from a group consisting of macromolecules, exfoliated clay platelets, nanoparticles, nanowires, and carbon nanotubes.

25. (Previously Presented) The method of claim 12 further comprising the step of:

inducing cross-linking between said layers by means selected from a group consisting of chemical, radiative, photoreactive and thermal means.

26. (Previously Presented) The method of claim 12 further comprising the step of repeating steps (a)(i) through (a)(iv) a predetermined number of times to form additional layers.